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(71) **Applicant** *(for all designated States except US)*: E. HELLER & COMPANY [US/US]; Suite 1000, 1311 Harbor Bay Parkway, Alameda, CA 94502 (US).

(72) **Inventors; and**
(75) **Inventors/Applicants** *(for US only)*: SAY, James [US/US]; 2800 Pearl Harbor, Alameda, CA 94501 (US). TOMASCO, Michael, F. [US/US]; 22528 Poppy Drive, Cupertino, CA 95014 (US). HELLER, Adam [US/US]; 5317 Valburn Circle, Austin, TX 78731 (US). GAL, Yoram [IL/IL]; P.O. Box 126, 30065 Kibbutz Yagur (IL). ARIA, Behrad [US/US]; 817 Santa Clara Avenue, Alameda, CA 94502 (US). HELLER, Ephraim [US/US]; 44 Stark Knoll Place, Oakland, CA 94618 (US). PLANTE, Phillip, J. [US/US]; 268 Monterey Boulevard, San Francisco, CA 94131 (US). VREEKE, Mark, S. [US/US]; 2826 Calhoun Street, Alameda, CA 94501 (US).

(74) **Agent:** DAIGNAULT, Ronald, A.; Merchant, Gould, Smith, Edell, Welter & Schmidt, P.A., 3100 Norwest Center, 90 South Seventh Street, Minneapolis, MN 55402–4131 (US).

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(54) **Title:** ELECTROCHEMICAL ANALYTE SENSOR

(57) **Abstract**

An electrochemical analyte sensor formed using conductive traces on a substrate can be used for determining and/or monitoring a level of analyte in *in vitro* or *in vivo* analyte–containing fluids. For example, an implantable sensor may be used for the continuous or automatic monitoring of a level of an analyte, such as glucose, lactate, or oxygen, in a patient. The electrochemical analyte sensor includes a substrate and conductive material disposed on the substrate, the conductive material forming a working electrode. In some sensors, the conductive material is disposed in recessed channels formed in a surface of the sensor. An electron transfer agent and/or catalyst may be provided to facilitate the electrolysis of the analyte or of a second compound whose level depends on the level of the analyte. A potential is formed between the working electrode and a reference electrode or counter/reference electrode and the resulting current is a function of the concentration of the analyte in the body fluid.